

(2) Two copies of plans or specifications of the material;

(3) A detailed description of the quality control procedures used in manufacturing the material; and

(4) A test report containing observations and results of approval testing conducted.

(c) The Commandant advises the applicant whether the retroreflective material is approved. If the material is approved, an approval certificate is sent to the applicant.

[CGD 76-028, 44 FR 38786, July 2, 1979, as amended by CGD 82-063b, 48 FR 4783, Feb. 3, 1983; CGD 88-070, 53 FR 34537, Sept. 7, 1988; CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50734, Sept. 27, 1996]

§ 164.018-9 Design requirements.

(a) Type I retroreflective material must be capable of being attached to lifesaving equipment either by sewing it to the equipment or by means of an adhesive. Type II material must be capable of being attached to lifesaving equipment either by mechanical fasteners or by an adhesive.

(b) The following information must be stated on retroreflective material or on the package in which it is supplied to a user:

(1) Each surface to which the retroreflective material is designed to be attached.

(2) The instructions for attaching the material to each surface described in paragraph (b)(1) of this section.

(c) When retroreflective material designed for use with an adhesive is tested in accordance with the "adhesion" test method listed in § 164.018-11, the material must not peel for a distance of more than 5 cm (2 in.).

(d) When dry material is tested in accordance with the "reflective intensity" test method listed in § 164.018-11, the reflective intensity of the material must be equal to or greater than the values for reflective intensity listed in Table 164.018-9.

(e) When wet material is tested in accordance with the "reflective intensity during rainfall" test method listed in § 164.018-11, the reflective intensity of the material must be at least 90 percent of the values listed in Table 164.018-9.

(f) The reflective intensity of material after testing in accordance with the "resistance to accelerated weathering" test method listed in § 164.018-11 must be at least 50 percent of the values listed in Table 164.018-9.

(g) After testing in accordance with the "fungus resistance" test method listed in § 164.018-11, retroreflective material must not support fungus growth, and the reflective intensity of the material must be equal to or greater than the values for reflective intensity listed in Table 164.018-9.

(h) The reflective intensity of materials after testing in accordance with the "resistance to water immersion" test method described in § 164.018-11, must be equal to or greater than the values listed in Table 164.018-9, except that retroreflectivity is not required in the area extending outward 5 mm (0.2 inches) from each side of the cuts made in the material.

(i) The reflective intensity of material after testing in accordance with the "abrasion resistance" test method described in § 164.018-11(b)(2), must be at least 50 percent of the values listed in Table 164.018-9.

(j) After retroreflective material is tested in accordance with the "soil resistance and cleanability" test method described in § 164.018-11(b)(3) the material must not have any visible damage or permanent soiling.

(k) Except as provided in paragraphs (c) through (j) of this section, retroreflective material when tested in accordance with the test methods listed in § 164.018-11 must meet the requirements prescribed for those test methods in Federal Specification L-S-300.

TABLE 164.018-9—REFLECTIVE INTENSITY

Divergence angle ¹ (Observation angle) ²	Incidence angle ¹ (Entrance angle) ²	Reflective intensity ¹ (Specific intensity per unit area) ²
0.2°	—4°	150
.2°	+30°	75
.2°	+45°	50
.5	—4°	57
.5	+30°	33
.5	+45°	25
2.0°	—4°	2.5
2.0°	+30°	2.0
2.0°	+45°	1.0

¹These terms are described in Federal Specification L-S-300.

²These terms are described in Federal Test Method Standard 370.